

The listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Canceled)
2. (Canceled)
3. (Canceled)
4. (Canceled)
5. (Currently Amended) The stimulator of claim 9, further comprising a A means for generating electrical stimulation of bone to enhance healing and effectiveness of biologics for osteogenesis.
6. (Canceled)
7. (Canceled)
8. (Canceled)
9. (Original) A stimulator for osteogenesis and the treatment of osteoporosis, comprising:
 - a pulse generator that generates digital signal pulses;
 - a field-programmable gate array connected to said pulse generator that generates a sine-wave-like output waveform that is further processed into first and second circuits; and
 - two pairs of surface electrodes connected to said field-programmable gate array and positioned on a subject's skin surface at predetermined locations to produce an interferential current output waveform from said first and second circuits.
10. (Original) The stimulator of claim 9, wherein said interferential current output waveform includes a base medium frequency of at least 1KHz but no more than 20KHz.
11. (Original) The stimulator of claim 9, wherein said interferential current waveform includes a resultant beat frequency of no more than 250 Hz.
12. (Canceled)
13. (Canceled)

14. (Canceled)

15. (Canceled)

16. (Currently Amended) A method for electrical stimulation of bone to promote osteogenesis, said method comprising:

connecting a pulse generator to a digital signal processor and supplying digital signal pulses to ~~a said~~ field-programmable gate array which produces a sine-wave-like current waveform which is further processed and output to first and second pairs of surface electrodes, wherein first and second circuits are created, respectively;

positioning said first pair of surface electrodes on a subject's skin surface at one set of diagonal corners of an incision site;

positioning said second pair of surface electrodes on the subject's skin surface at the other set of diagonal corners of the incision site; and

creating an interferential current with a base medium frequency of at least 1KHz but no more than 20KHz.

17. (Original) The method according to claim 16, wherein said method further includes varying positions of said first and second pairs of surface electrodes.

18. (Original) The method according to claim 16, wherein said method further includes modulating outputs of amplitudes of said first and second circuits.

19. (Original) The method according to claim 16, wherein said method includes creating an interferential current with a resultant beat frequency of no more than 250 Hz.

20. (New) A method for electrical stimulation of bone to promote osteogenesis, said method comprising:

connecting a pulse generator to a digital signal processor and supplying digital signal pulses to a field-programmable gate array which produces a sine-wave-like current waveform which is further processed and output to first and second pairs of surface electrodes, wherein first and second circuits are created, respectively;

positioning said first pair of surface electrodes on a subject's skin surface at one set of diagonal corners of an incision site;

positioning said second pair of surface electrodes on the subject's skin surface at the other set of diagonal corners of the incision site;

creating an interferential current with a base medium frequency of at least 1KHz but no more than 20KHz; and

generating electrical stimulation of bone to enhance healing and effectiveness of biologics for osteogenesis.

21. (New) A method of electrical stimulation for osteogenesis and the treatment of osteoporosis, comprising the steps of:

generating digital signal pulses using a pulse generator;

generating a sine-wave-like output waveform from a field-programmable gate array that is connected to said pulse generator;

processing said sine-wave-like output waveform into first and second circuits; and

producing an interferential current output waveform from said first and second circuits via two pairs of surface electrodes connected to said field-programmable gate array and positioned at predetermined locations on a subject's skin surface.